USGS
science for a changing world

National Climate Change and Wildlife Science Center

Delivering Science to Help the Nation's Fish, Wildlife, and Ecosystems Cope with Climate Change

The earth's climate, including changes in temperature, weather patterns, and precipitation, will likely result in significant effects on our nation's fish and wildlife resources now and in the future. Relatively little scientific information exists on which to base management strategies to help fish and wildlife adapt to climate change. The **U.S. Geological Survey** (USGS) is meeting this challenge through the **National Climate Change** and **Wildlife Science Center** (NCCWSC) and the Center's partnerships with the Department of the Interior's Climate Science Centers.

The Center was established by Congress in 2008 to help deliver scientific and technical information to help natural resource managers cope with a changing climate.

Working in partnership with both resource managers and scientists at national, regional, and landscape levels, including Interior's eight Climate Science Centers and federal, tribal, state, local, university, NGO, and other partners, the NCCWSC will:

- ***Forecast fish and wildlife population and habitat changes in response to climate change.***
- ***Assess the vulnerability and risk of species and habitats to climate change.***
- ***Link models of physical climate change (such as temperature and precipitation) with models that predict ecological, habitat, and population responses.***
- ***Develop standardized approaches to monitoring and help link existing monitoring efforts to climate and ecological or biological response models.***

The Center is a partnership-oriented institution. It works closely with natural resource agencies and scientists inside and outside government to gather the information and build the tools managers need to help fish and wildlife and their habitats and ecosystems adapt to climate change. Such interactions at national, regional, and landscape levels ensure that NCCWSC's science is focused on key priorities – as defined by managers – and is delivered to users effectively.

Regionally Focused: The Center will work closely with eight Department of the Interior (DOI) Regional Climate Science Centers, to be established over the next three years. These regional centers will address the science and information needs of a full range of natural and cultural resource managers. Funds and scientific staff from multiple Interior Department bureaus (e.g., USGS, National Park Service, Bureau of Reclamation, Fish and Wildlife Service) will be pooled to support and leverage these centers. Centers in Alaska, the Northwest and Southeast will be established in 2010, with additional centers added in 2011 and 2012 as resources permit.

Regional Climate Science Centers will be housed at host institutions with substantial climate change expertise and partnerships. Expected benefits from the host institutions include access to supercomputing capability as well as, for universities, faculty and graduate student expertise. Each CSC will also have a regional science-management advisory committee, which will establish the Center's strategic priorities and will work closely with the Department's Landscape Conservation Cooperatives to ensure strong links to management needs and applications.

Regional Climate Science Centers will work closely with the emerging network of Landscape Conservation Cooperatives (LCCs). LCCs are management-science partnerships that inform integrated resource management actions addressing climate change and other stressors within and across landscapes. They will link science and conservation delivery. LCCs are true cooperatives, formed and directed by land, water, wildlife and cultural resource managers and interested public and private organizations. Federal, state, tribal, local government and non-governmental management organizations are all invited as partners in their development. Each LCC will be directed by a steering committee representing partners working in that region. LCCs will also be represented on the partnership advisory committees for each CSC. See ***http://doi.gov/whatwedo/climate/strategy/index.cfm***

Working with both the Climate Science Centers and the Landscape Conservation Cooperatives, NCCWSC staff and funding will produce regional ecological and biological response models

for priority species and habitats, and provide access to fundamental climate change science related to the development of effective and measurable adaptation activities for fish, wildlife and their habitats. About three-fourths of NCCWSC funding at the CSCs will be dedicated to scientific activities.

The National Climate Change and Wildlife Science Center will include a small science staff located at USGS headquarters in Reston, Virginia. These staff foster national partnerships and identify and meet national or multi-regional science needs. They will convene a national advisory committee, with both management and science expertise, to guide the Center's overall direction.

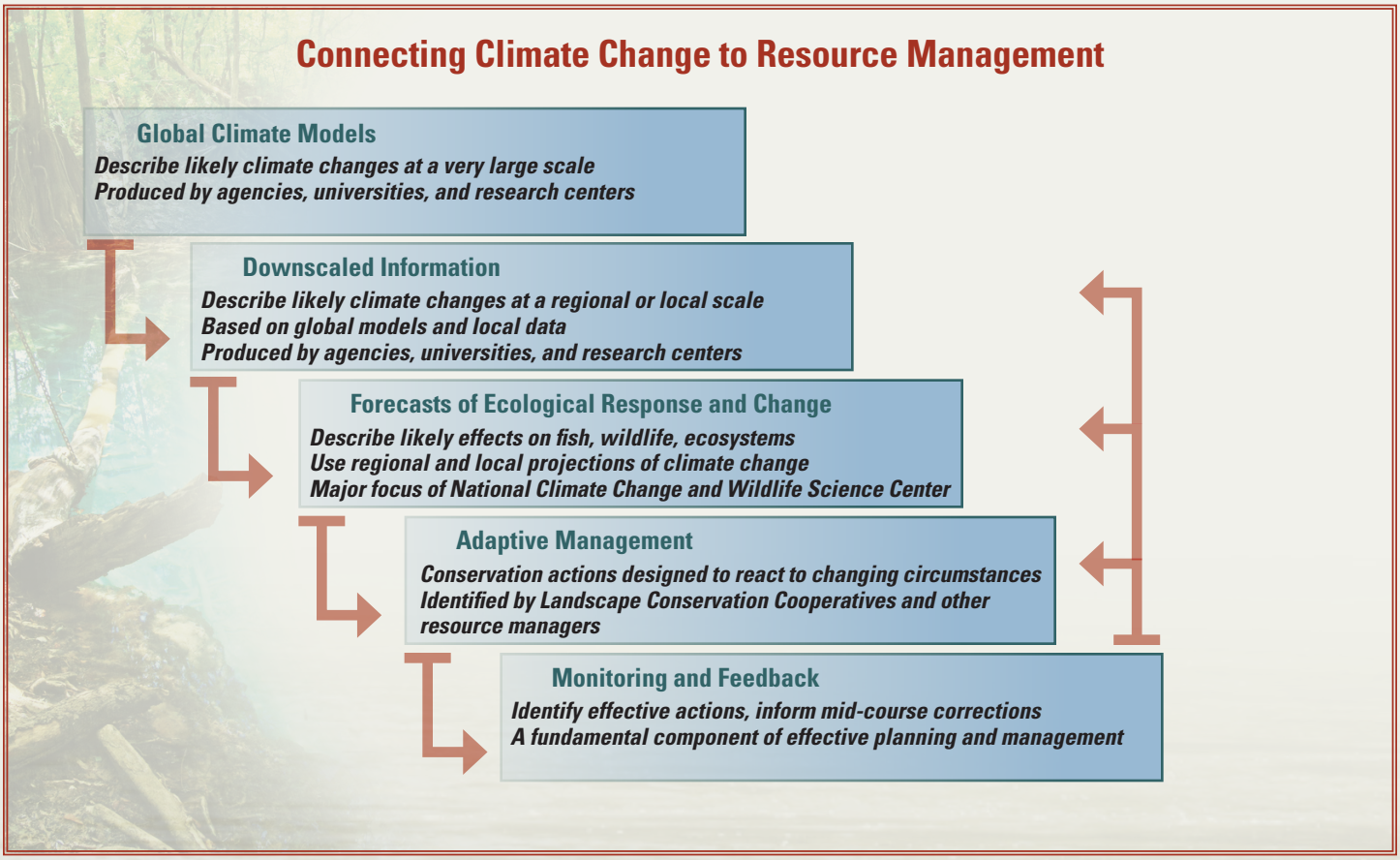
Climate Science in the Southeast: A Pilot Project

The effects of climate change will vary by region and even by landscape. Because of this, natural resource managers need solid scientific information that can help them more precisely pinpoint factors driving changes and to determine how those changes affect important resources.

The southeastern U.S. is home to an exceptionally rich diversity of ecosystems, plants, and animals. Yet the region is already experience a warming and drier climate, which is expected to intensify over the next few decades. Some species are likely to be extirpated, while others will expand or decline in range or abundance. Climate change effects on the environmental conditions necessary to sustain or increase fish and wildlife populations will be important to decision makers challenged with balancing other land uses, including agriculture, forestry, freshwater allocations, and transportation.

Scientists from multiple agencies and institutions in the Southeast are already hard at work converting global models into regional climate projections for the Southeast Regional Assessment Project. Their ultimate goal is to develop climatic and landscape change datasets that can be used to project climate change impacts on priority plants, animals, and ecosystems. Researchers are already designing change assessment tools so that resource managers can determine the best approaches for sustaining trust species and their habitats in the face of climate change. Additionally, scientists are also creating new tools for decision-makers to assess change in coastal regions where a combination of inundation, land loss, and habitat change is expected to occur.

Contact: ***Doug Beard, Interim Director (dbeard@usgs.gov) or Robin O'Malley, Policy and Partnership Coordinator (romalley@usgs.gov)***



The National Climate Change and Wildlife Science Center (NCCWSC) will work closely with DOI Climate Science Centers and Landscape Conservation Cooperatives to integrate scientific information and apply it to conservation challenges raised by the Earth's changing climate